

Remarks

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1-21 are pending in the application, with 1 and 12 being the independent claims. New claims 19-21 are sought to be added. Claims 1, 12, and 17 are sought to be amended. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Applicant notes that the application was originally filed without claim 8. As per 37 C.F.R. 1.126, Applicant has not renumbered the claims to correct this defect.

Based on the above amendment and the following remarks, Applicant respectfully requests that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Objection to the Specification

The specification was objected to because of five informalities. Applicant has amended the paragraphs on Page 2, Page 3, and Page 4 as suggested by the Examiner. The Examiner objected to the paragraph beginning on Page 7, line 11 stating that on line 11 "Figure 4 should be inserted after 224a." Applicant has amended the paragraph to recite: "As shown in Figure 4, the receiver 224a comprises a time equaliser 234a, a subtractor 238a, a cyclic ..."

The Examiner further objected to the paragraph beginning on Page 7, line 18 because the text "'In accordance with conventional techniques, the echo canceller 242a preferably comprises an adaptive filter and receives a representation on line 225 of the signal in the transceiver for the modem 218, which is being transmitted by the hybrid

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220' is inconsistent with Figure 2" which depicts line 225 as being directly connected from a transmitter 223 to the hybrid. Applicant submits that the use of reference number 225 in Figure 4 was a typographical error. Applicant has amended line 22 and Figure 4 to use the reference number 227 when referencing the line into echo canceller 242a.

Based on the above amendments to the specification, Applicant respectfully requests that the Examiner reconsider and withdraw this objection.

Objections to the Drawings

FIG. 2 was objected to because the reference number for the line signal between the Splitter and Receiver 2 was not clear. FIGs 3a, 3b were objected to because a "wrong reference number '218' instead of '221' is assigned to Figure 3a and 3b" and the reference numbers "for the HP filter, ADC, and line and output signals" were not clear. FIG. 4 was objected to because "the reference number '224' should be changed to '224a.'" Applicant has amended FIGs. 2, 3a, 3b, and 4 to address the Examiner's objections in the concurrently attached replacement sheets. Therefore, Applicant respectfully requests that the Examiner reconsider and withdraw this objection.

Rejections under 35 U.S.C. § 102

In the Office Action, Claims 1, 3-6, and 10-14 were rejected under 35 U.S.C. §102(b) as being anticipated by Timm, *et al*, U.S. Patent 6,055,268 (Timm). Applicant notes that the application was filed without a claim 8. Based on the language used by the Examiner the rejection, Applicant believes that the Examiner has renumbered the claims to correct this defect. Therefore, Applicant assumes that the rejection covers claims 1, 3-

6, and 11-15, as originally filed. If this assumption is incorrect, Applicant requests that the Examiner issue a corrected non-final Action clarifying the rejection and resetting the date for response.

Independent claims 1 and 12 have been amended by the above amendment.

Amended independent claim 1 recites:

1. A receiver for demodulating a multi-tone, multi-band signal modulated using an inverse discrete Fourier transform to generate a signal having a plurality of tones spaced in frequency in a plurality of frequency bands, comprising:

a plurality of demodulators, wherein each of the plurality of demodulators demodulates one of the plurality of frequency bands of the multi-tone, multi-band signal, and wherein each demodulator includes a discrete Fourier transform module that performs a discrete Fourier transform on the plurality of tones within one of the plurality of frequency bands.

Amended independent claim 12 recites:

12. A method of demodulating a multi-tone, multi-band signal modulated using an inverse discrete Fourier transform, comprising the steps of:

dividing the multi-tone, multi-band signal into a plurality of data signals, each data signal having a plurality of tones in one of the plurality of frequency bands; and

demodulating each of the plurality of data signals using a discrete Fourier transform.

Applicant submits that Timm does not teach or suggest every feature recited in applicant's amended independent claims 1 and 12. Timm describes "an MDSL modem pool" that "can have N logical MDSL modems, each consisting of a transmitter part and a receiver part." Each receiver processes a transmit signal received over a single MDSL line. (Col. 47, lines 19-56; *See also*, FIG. 14a).

Timm does not teach or suggest a receiver associated with a line having "a plurality of demodulators, wherein each of the plurality of demodulators demodulates

one of the plurality of frequency bands of the multi-tone, multi-band signal, and wherein each demodulator includes a discrete Fourier transform module that performs a discrete Fourier transform on the plurality of tones within one of the plurality of frequency bands", as recited in amended claim 1. Furthermore, Timm does not teach "dividing the multi-tone, multi-band signal into a plurality of data signals, each data signal having a plurality of tones in one of the plurality of frequency bands; and demodulating each of the plurality of data signals using a discrete Fourier transform", as recited in amended claim 12.

For the foregoing reasons, Applicant submits that Timm does not disclose or teach the features as recited in Applicant's amended claims 1 and 12. Applicant respectfully requests that the Examiner reconsider and withdraw this rejection as to amended claims 1 and 12 and their respective dependent claims 3-6 and 13-15 (as originally filed).

Rejections under 35 U.S.C. § 103

Timm in view of Lee

Claim 2 was rejected under 35 U.S.C. §103(a) as being unpatentable over Timm in view of Lee, *et al*, U.S. Patent 5,818,296 (Lee). Claim 2 depends from claim 1. Lee does not overcome all of the deficiencies of Timm relative to claim 1 described above. For at least these reasons, and further in view of its own features, claim 2 is patentable over the combination of Timm and Lee. Reconsideration and withdrawal of the ground of rejection is therefore respectfully requested.

Timm in view of Ho

Claims 7, 8, 15, and 17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Timm in view of Ho, *et al*, U.S. Patent 5,317,596 (Ho). As stated above, Applicant notes that the application was filed without a claim 8. Based on the language used by the Examiner the rejection, Applicant assumes that the rejection covers claims 7,8, 16, and 18, as originally filed. If this assumption is incorrect, Applicant requests that the Examiner issue a corrected non-final Action clarifying the rejection and resetting the date for response.

Claims 7 and 8 depend from claim 1 and claims 16 and 18 depend from claim 12 (as originally filed). Ho does not overcome all of the deficiencies of Timm relative to claims 1 and 12 described above. For at least these reasons, and further in view of their own features, claims 7, 8, 16, and 18 (as originally filed) are patentable over the combination of Timm and Ho. Reconsideration and withdrawal of the ground of rejection is therefore respectfully requested.

Timm in view of Agee

Claims 9 and 16 were rejected under 35 U.S.C. §103(a) as being unpatentable over Timm in view of Agee U.S. Patent 6,128,276 (Agee). As stated above, Applicant notes that the application was filed without a claim 8. Based on the language used by the Examiner the rejection, Applicant assumes that the rejection covers claims 10 and 17, as originally filed. If this assumption is incorrect, Applicant requests that the Examiner issue a corrected non-final Action clarifying the rejection and resetting the date for response.

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Claims 10 depends from claim 1 and claim 17 depends from claim 12 (as originally filed). Agee does not overcome all of the deficiencies of Timm relative to claims 1 and 12 described above. For at least these reasons, and further in view of their own features, claims 10 and 17 (as originally filed) are patentable over the combination of Timm and Agee. Reconsideration and withdrawal of the ground of rejection is therefore respectfully requested.

Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

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Prompt and favorable consideration of this Amendment and Reply is respectfully
requested.

Respectfully submitted,

 STERN, NESSLER, GOLDSTEIN & FOX P.L.L.C.

Robert Sokohl
Attorney for Applicant
Registration No. 36,013

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1100 New York Avenue, N.W.
Washington, D.C. 20005-3934
(202) 371-2600

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